MUSSEL SURVEY

ASK an EXPERT
ABOUT THE MINNESOTA RIVER

What is a mussel survey?

The Minnesota Department of Natural Resources conducts surveys across the state to record the distribution and abundance patterns of mussels. This information is used to protect areas of a healthy mussel population and target areas that have seen a loss of species and numbers. To conduct a survey, mussel experts (malacologists) will search the bottom of a river in a particular area by using their hands to feel for the mussels. If the water is low enough they wade through the river on their knees or use scuba equipment if the water level is higher.

What trends to the surveys show?

A number of patterns have been identified by DNR mussel experts when it comes to the Minnesota River Basin. The lower Minnesota River and its corresponding watersheds have been hit harder with loss mussels compared to those watersheds found in the upper or headwaters reach. There has been a loss of almost 66% of the mussel species once found in the lower Minnesota River.

The Greater Blue Earth River Watershed (including the Watonwan and Le Sueur River rivers) is one of the largest watersheds in the basin and one of the most degraded. As of 2011, DNR biologists found only 13 of the 25 historic mussel species in the watershed. Even some of the most common mussel species – fat mucket, three ridge and Wabash pigtoe – found in other areas of the Basin are rare or have disappeared from the Greater Blue earth River systems.

In 2003, thirty-one sites were sampled in the Cottonwood River Watershed. A total of 13 out of 20 different species were recorded with the most common being the plain pocketbook and fat mucket. The total number of live mussels collected (within 58 hours of sampling) was 646.

According to the MN DNR mussel experts, the Chippewa and Pomme de Terre watersheds hold some of the best remaining mussel assemblages in the entire Minnesota River Basin system. This includes reproducing population of black sandshell and elktoe, and the only remaining population of spike within the entire system. Both the spike and black sandshell (each listed as special concern) have disappeared from the main stem of the Minnesota River. The Chippewa and Pomme de Terre rivers retain a majority of the mussel species historically found in the two watersheds. In the Chippewa 16 out of 21 mussel species are still found and in the Pomme de Terre it is 14 out of 17 species.

What is killing mussels?

There is a variety of factors behind mussel species and abundance loss including Habitat loss, Dredging, Chemical pollution, Sedimentation, Channelization, Wetland drainage, Overharvesting of mussels, Excessive tiling, Dams, Industrial pollution, Competition from exotic species, Drought, and Unstable substrates.

SURVEY RESULTS

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The map below shows percent loss of mussel species in watersheds across the Minnesota River Basin based on mussel surveys performed by the Minnesota Department of Natural Resources.